Space Weather Forecast

Issued on Saturday, 07 May 2022 at 13:06 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight Chance of Minor/Moderate radio blackouts from X-ray flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over the past 24 hours, with several Common class flares. There are currently three numbered sunspot regions on the visible disc, AR3004 remains the largest and most complex, while AR3006 is smaller. AR3001 remains a small, simple and stable group. There are also a significant number of filaments (arcs of plasma) on the visible disc.
At present then, there are no Earth-directed Coronal Mass Ejections (CMEs) in available satellite imagery.

Solar Wind / Geomagnetic Activity: The solar wind was Slow and the important northwards/southwards component of the magnetic field strength remained weak. This resulted geomagnetic activity being Quiet.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: There is a slight chance of Moderate class flares for the first couple of days and this might become less likely for days 3 and 4 (9th and 10th May) as AR3004 rotates across the western limb. However a new and potentially active region appears likely to rotate onto the southeast limb during this period to maintain a risk.

Solar Wind / Geomagnetic Activity: No significant coronal holes feature in this forecast. Reanalysis of a centre-disc disturbance from the vicinity of AR3004 at 1700UTC on 03 May has resulted in a low confidence arrival of a coronal mass ejection (CME) later on day 1 (7 May), but more likely early on day 2 (8 May). This may give some enhancement to geomagnetic activity otherwise geomagnetism will remain predominantly Quiet.

Energetic Particles / Solar Radiation: Solar radiation storms are likely in the period.

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Met Office

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	20	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	40	40	20	20
Very Active	R3 to R5 X	No	5	5	2	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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